gasoline has a vapor pressure of 6.2 psi at 70 °F.[1] Since the vapor pressure of ethanol is an order of magnitude smaller than gasoline and the total permitted throughput at the loading rack will not exceed current permitted limits, the volatile organic compound (VOC) emissions from the vapor combustion unit (VCU), which controls emissions from the loading rack, are not expected to increase. As VOC emissions are not expected to increase, Tesoro believes that operating within the constraints of the PTC No. P-050055 will continue to guarantee that the Boise Terminal will not cause a violation of the National Ambient Air Quality Standards (NAAQS). As such, modeling VOC emissions for comparison to the NAAQS is not necessary for this permitting action.

Ethanol is defined as a regulated Toxic Air Pollutant (TAP) per IDAPA 58.01.01.585; thus, TAP emissions are expected to increase as a result of the proposed modifications. This modeling protocol explains the procedures that will be used to estimate the ambient air concentration of ethanol from the Boise Terminal. The estimated ambient air concentration of ethanol will be compared to ethanol's acceptable ambient concentration (AAC) presented in IDAPA 58.01.01.585.

The total combined throughput of ethanol and gasoline will not exceed the permitted value of 280,000,000 gallons per year. Once the project is complete, Tesoro will have the capability to load either pure ethanol or ethanol/gasoline blends at the loading rack (Emission Unit #1). According to the PTC and PPC application submittal requirements, a dispersion modeling analysis is required to demonstrate compliance with all applicable air quality rules and regulations. Because only TAP emissions are expect to increase as a result of this project, Tesoro must perform a TAP dispersion analysis to demonstrate compliance with the IDEQ preconstruction TAP regulations as outlined under IDAPA 58.01.01.210.03.

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[1] Ethanol vapor pressure from AP-42, *Compilation of Air Pollutant Emission Factors*, Table 7.1-3 – Physical Properties of Selected Petrochemicals, dated November 2006. Gasoline vapor pressure from AP-42, Table 7.1-2 – Properties (M_V,P_{VA},W_L) of Selected Petroleum Liquids, dated November 2006.

PROPOSED MODELING METHODOLOGY

Tesoro will model emissions from the proposed project using the selected model, meteorological data, and other modeling inputs, as described in the following sections.

MODEL SELECTION

Tesoro proposes to perform the dispersion modeling analysis using the SCREEN3 dispersion model. SCREEN3 is a screening dispersion model approved by the United States Environmental Protection Agency (EPA) for evaluating ambient air impacts. Results from the SCREEN3 modeling tend to produce conservative (i.e. high) estimates of impacts from emission sources. Due to the conservatism inherent to the SCREEN3 model, other models will only be used if the SCREEN3 results do not demonstrate compliance with the IDEQ TAP regulations. However, preliminary model results indicate that compliance with the IDEQ TAP regulations will not be an issue using the SCREEN3 dispersion model.

MODEL INPUTS AND OPTIONS

The following model inputs and options will be used for the SCREEN3 dispersion model analysis.

Meteorological Data

SCREEN3 examines a range of stability classes and wind speeds to identify the "worst-case" meteorological conditions (i.e. the combination of wind speed and stability that results in the maximum ground level concentrations). For the SCREEN3 dispersion modeling, the "full meteorology" option will be used to identify the worst-case meteorological conditions, and thereby determine maximum ambient impacts.

Building Downwash

The purpose of a building downwash analysis is to determine whether the plume discharged from a stack will become caught in the turbulent wake of a building (or other structure). Wind blowing around a building creates zones of turbulence that are greater than if the buildings were absent, resulting in downwash of the plume. Plume downwash can result in elevated ground-level concentrations.

Building downwash must be considered for the screening analysis to accurately represent the dispersion of emissions from the modeled stack. The dominant downwash structure input to the model is determined using the following equation to find the structure with the greatest Good Engineering Practice Height (H_{GEP}):

$$H_{GEP} = H_b + 1.5L$$

where H_b is the height of the structure and L is the lesser of the H_b or the projected width of the structure.

SCREEN3 conservatively assumes that the dominant structure is located next to the source and calculates the cavity region from the location of the source. The maximum concentration predicted by SCREEN3 that accounts for building downwash is used for comparison to ambient concentration standards.

Modeling Parameters

The modeling input parameters used for the analysis are shown below in Table 1.

TABLE 1. SCREEN3 MODELING INPUT PARAMETERS

Parameter	VCU	Units
Stack Height	45	ft
Exit Temperature	1200	°F
Inside Diameter	7.6	ft
Flow Rate	1,070	cfm
Distance to Property Line	53	ft
Building Downwash	YES	
Building Height	14	ft
Minimum Horizontal Distance	24	ft
Maximum Horizontal Distance	60	ft
Dispersion Coefficient	Urban	

The loading rack has a rated capacity of 324,000 gallons per hour, per Condition 2.1, Process Description, of the PTC No. P-050055. This hourly throughput will be used, in conjunction with the VCU emission limit of 35 milligrams of total organic compounds (TOC) per liter in accordance with 40 CFR 60.502(b), to determine the controlled ethanol emission rate.[2] The uncontrolled ethanol emission rate will be determined by utilizing the control efficiency of 95.1% reported in the most recent stack test on the VCU with the controlled ethanol emission rate.[3] The uncontrolled emission rate will then be used to scale the SCREEN3 modeling result and calculate the uncontrolled ambient concentration of ethanol. If necessary, the controlled ethanol emission rate may be used for modeling purposes should the uncontrolled ethanol concentration exceed the ethanol's AAC.

---

[2] It has been assumed that the VCU will have a similar removal efficiency while loading ethanol in place of gasoline.

[3] The performance test on the VCU occurred on August 31, 2005.

MODELING ANALYSIS

A unit emission rate (1lb/hr) will be used for the SCREEN3 modeling. SCREEN3 is a linear model; therefore, the maximum concentration results may be scaled in accordance with the calculated emission rate of ethanol. As the SCREEN3 model reports results on a 1-hour averaging period, the resulting modeled concentration of ethanol will be scaled to the averaging period of the AAC. The AACs presented in IDAPA 58.01.01.585 are based on a 24-hour averaging period. Therefore, the resulting modeled concentrations of ethanol will be scaled by a factor of 0.4 to compare with the 24-hour averaging period AAC.[4]

Please contact me at (253) 867-5600 or Mr. Brooks Neighbors at (210) 626-6327 if you have any questions.

Sincerely,

TRINITY CONSULTANTS

Melissa Hillman
Senior Consultant

Attachments

cc: Mr. Brooks Neighbors, Tesoro
Mr. Won Choe, Trinity

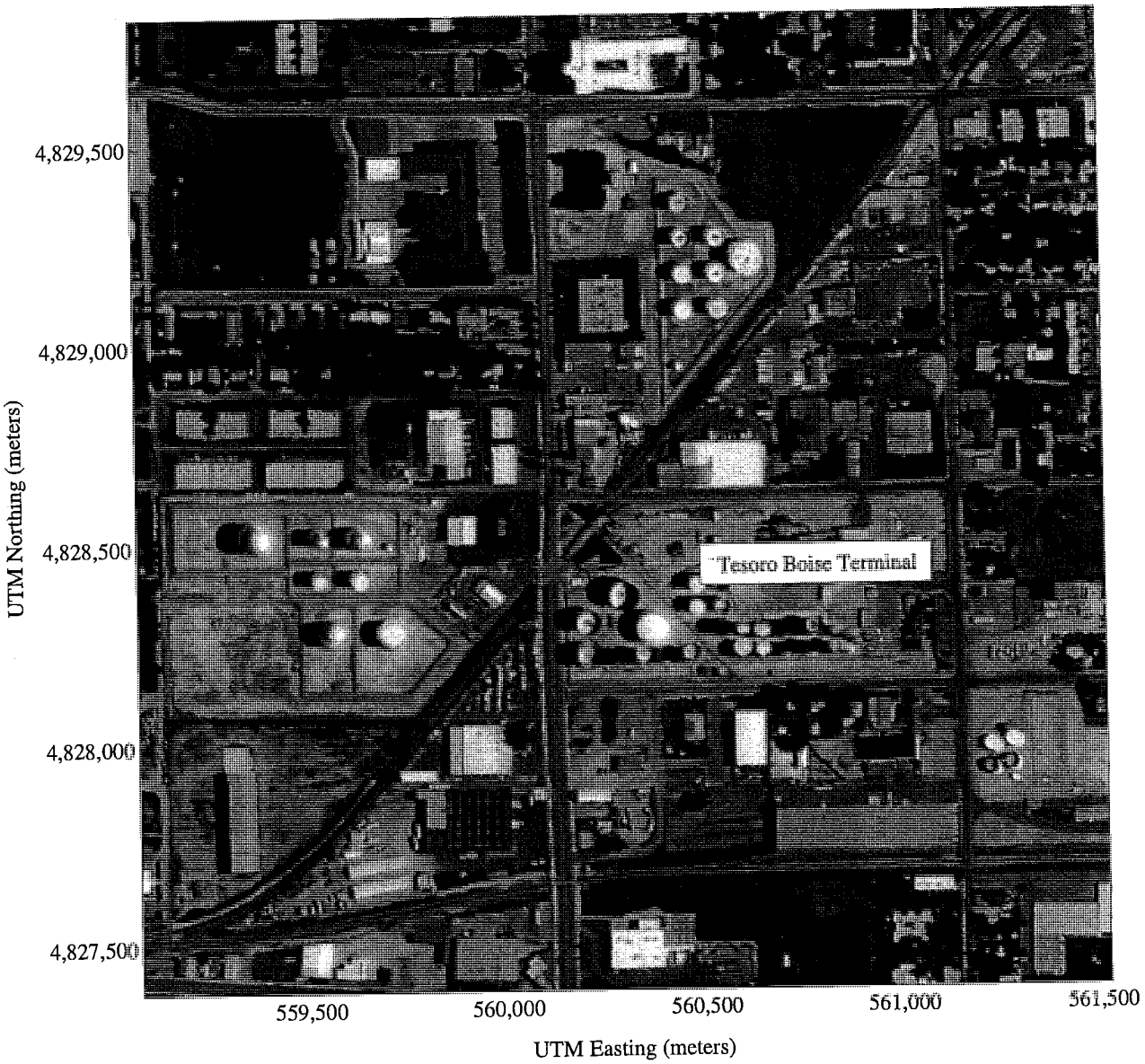
---

[4] Per U.S. Environmental Protection Agency, Office of Air and Radiation, Office of Air Quality Planning and Standards, *Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised (Research Triangle Park, NC: U.S. EPA-454/R-92-019)*, Page 15.

ATTACHMENT A

Area Map of Tesoro's Boise Terminal

Area Map of Tesoro Boise Terminal



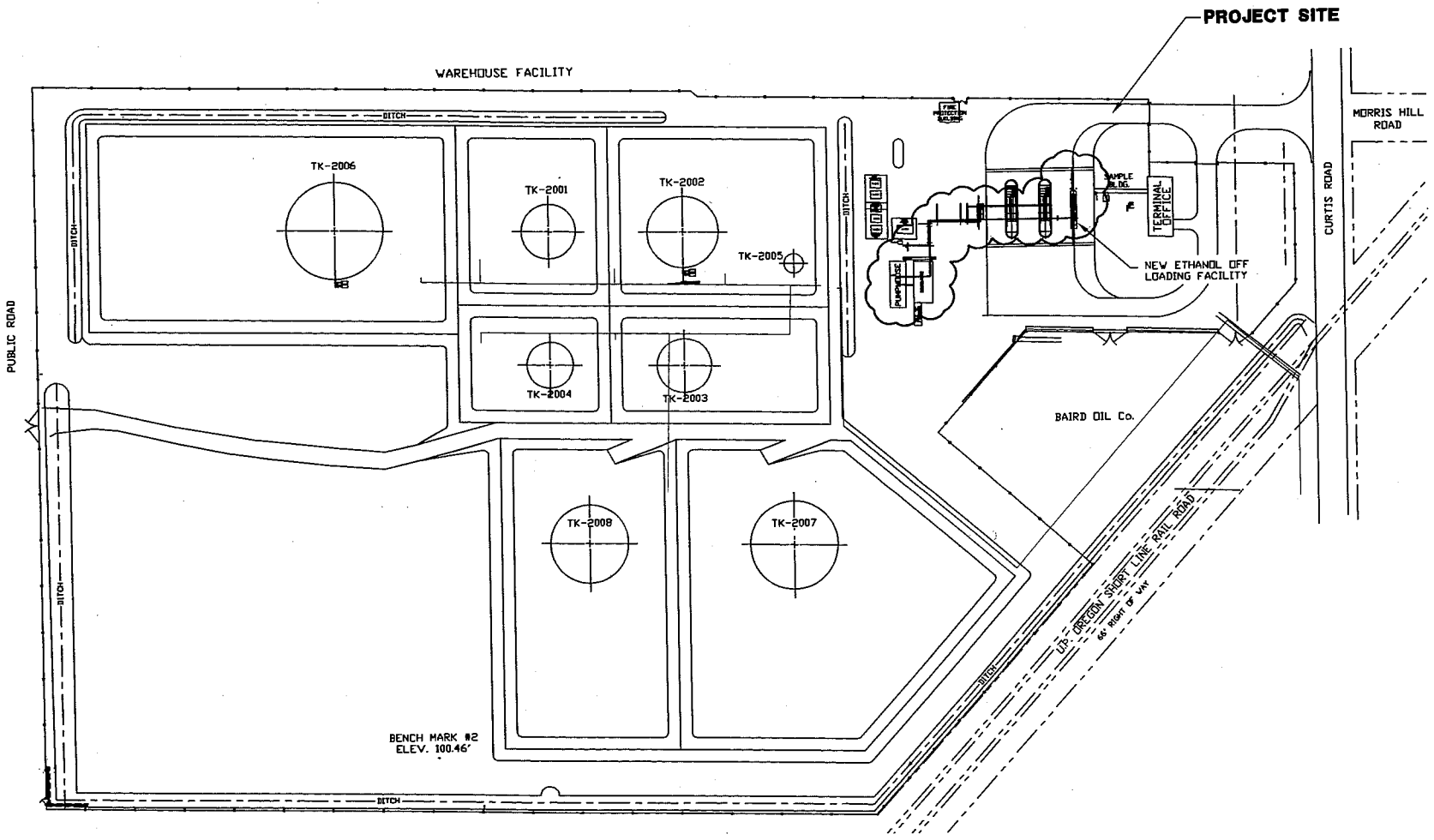
Trinity Consultants

World Geodetic System 1984; UTM Grid Zone 11
Compiled from USGS Topographic Maps

Project Number #084801.0027
July 2008

ATTACHMENT B

Plot Plan of Tesoro's Boise Terminal



ISSUED FOR PERMIT
JULY 11, 2008

LEGEND:
NEW WORK

REFERENCE DRAWINGS	DRAWING NO.	TITLE

REVISIONS	NO.	DESCRIPTION	BY	DATE	CHK	DATE	APP	DATE
	B	ISSUED FOR PERMIT	VT	7/11/08	JD	7/11/08		
	A	ISSUED FOR REVIEW & APPROVAL	VR	6/24/08	JD	6/24/08		

	BY	DATE	REC JOB NUMBER:
DRAWN	VR	5/28/08	CLIENT CONTRACT NUMBER:
CHECKED	-	-	CAD FILE: 1486-P-01
APPROVED	-	-	

PREPARED BY:
SUN ENGINEERING SERVICES, INC.
1420 Kettner Blvd., Suite 310
San Diego, CA 92101
(714) 379-2300
7/11/08 1486\1486-P-01

TESORO REFINING & MARKETING COMPANY

BOISE TERMINAL
ETHANOL BLENDING FACILITY
SITE PLAN

SCALE: 1"=50' DWG: 1486-P-01 REV: B

JUL 18 2008 11:17 AM

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 NORTH HILTON, BOISE, ID 83706 · (208) 373-0502

C. L. "BUTCH" OTTER, GOVERNOR
TONI HARDESTY, DIRECTOR

VIA E-MAIL: Melissa Hillman [MHillman@trinityconsultants.com]

July 28, 2008

Melissa Hillman
Trinity Consultants
Kent, Washington

RE: Modeling Protocol for Modifications to the Tesoro Refining & Marketing Company, Boise Terminal, Located in Boise, Idaho

Melissa:

DEQ received your dispersion modeling protocol on July 25, 2008. The modeling protocol was submitted on behalf of Tesoro Refining & Marketing Company (Tesoro). The modeling protocol proposes methods and data for use in the ambient impact analyses of a Permit to Construct application for modifications to Tesoro's petroleum products terminal in Boise, Idaho.

The modeling protocol has been reviewed and DEQ has the following comments:

- Comment 1: Stack Parameters. The application should provide documentation and justification for stack parameters used in the modeling analyses, clearly stating what temperature and flow rates values are based on (combustion evaluation calculations, fan curves, direct measurement, etc.) and showing how values were estimated. In most instances, applicants should use typical parameters, not maximum temperatures and flow rates. If stack parameters for a specific source may vary considerably, additional modeling scenarios should be performed to assess the affect on ambient concentrations, especially if modeled impacts are fairly close to applicable standards.

- Comment 2: Building Downwash. Please provide documentation (calculations) in the application clearly showing how the dominant structure was determined and considered in the analyses.

DEQ's modeling staff considers the submitted dispersion modeling protocol, with resolution of the additional items noted above, to be approved. It should be noted, however, that the approval of this modeling protocol is not meant to imply approval of a completed dispersion modeling analysis. Please refer to the *State of Idaho Air Quality Modeling Guideline*, which is available on the Internet at http://www.deq.state.id.us/air/permits_forms/permitting/modeling_guideline.pdf, for further guidance.

To ensure a complete and timely review of the final analysis, our modeling staff requests that electronic copies of all modeling input and output files are submitted with an analysis report. If you have any further questions or comments, please contact me at (208) 373-0112.

Sincerely,

Kevin Schilling

Kevin Schilling
Stationary Source Air Modeling Coordinator
Idaho Department of Environmental Quality
208 373-0112

APPENDIX F

SCREEN3 OUTPUT FILE

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

TESORO_BOISE ** 16.1544

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.125998
STACK HEIGHT (M)	=	13.7160
STK INSIDE DIAM (M)	=	2.3177
STK EXIT VELOCITY (M/S)	=	0.6582
STK GAS EXIT TEMP (K)	=	588.7056
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	4.2672
MIN HORIZ BLDG DIM (M)	=	7.3152
MAX HORIZ BLDG DIM (M)	=	19.6901

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 2.7769389 (M**3/S)

BUOY. FLUX = 4.354 M**4/S**3; MOM. FLUX = 0.290 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	71.26	0.78	0.75	NO
100.	12.96	4	5.0	5.4	1600.0	19.26	15.97	14.11	NO
200.	8.826	4	2.5	2.7	800.0	31.76	31.54	28.04	NO
300.	6.462	4	1.5	1.6	480.0	48.42	46.76	41.80	NO
400.	6.662	6	1.0	1.1	10000.0	48.56	42.35	27.65	NO
500.	7.073	6	1.0	1.1	10000.0	48.56	51.43	32.23	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
46.	14.79	3	10.0	10.7	3200.0	13.11	10.28	9.44	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** REGULATORY (Default) ***
PERFORMING CAVITY CALCULATIONS
WITH ORIGINAL SCREEN CAVITY MODEL
(BRODE, 1988)
****

*** CAVITY CALCULATION - 1 ***			*** CAVITY CALCULATION - 2 ***		
CONC (UG/M**3)	=	0.000	CONC (UG/M**3)	=	0.000
CRIT WS @10M (M/S)	=	99.99	CRIT WS @10M (M/S)	=	99.99
CRIT WS @ HS (M/S)	=	99.99	CRIT WS @ HS (M/S)	=	99.99
DILUTION WS (M/S)	=	99.99	DILUTION WS (M/S)	=	99.99
CAVITY HT (M)	=	5.00	CAVITY HT (M)	=	4.28
CAVITY LENGTH (M)	=	14.49	CAVITY LENGTH (M)	=	8.96
LONGWIND DIM (M)	=	7.32	ALONGWIND DIM (M)	=	19.69

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

****
END OF CAVITY CALCULATIONS
****

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	14.79	46.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

```
***  SCREEN3 MODEL RUN  ***
*** VERSION DATED 96043 ***

TESORO_BOISE  ** 16.1544

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =          POINT
   EMISSION RATE (G/S)      =       0.125998
   STACK HEIGHT (M)         =        13.7160
   STK INSIDE DIAM (M)      =         2.3177
   STK EXIT VELOCITY (M/S)=           0.7181
   STK GAS EXIT TEMP (K)    =      866.4833
   AMBIENT AIR TEMP (K)     =      293.0000
   RECEPTOR HEIGHT (M)      =         0.0000
   URBAN/RURAL OPTION       =          URBAN
   BUILDING HEIGHT (M)      =         4.2672
   MIN HORIZ BLDG DIM (M)   =         7.3152
   MAX HORIZ BLDG DIM (M)   =        19.6901

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   STACK EXIT VELOCITY WAS CALCULATED FROM
   VOLUME FLOW RATE =    3.0294311     (M**3/S)

BUOY. FLUX =     6.259 M**4/S**3;  MOM. FLUX =     0.234 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF     0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC                    U10M   USTK   MIX HT    PLUME    SIGMA    SIGMA
   (M)   (UG/M**3)    STAB       (M/S)  (M/S)     (M)     HT (M)   Y (M)    Z (M)   DWASH
  ----   ---------    ----       -----  -----   ------    ------   ------   ------   -----
    1.     0.000        1         1.0    1.0    320.0     90.79     0.86     0.84     NO
  100.     10.04        4         8.0    8.7   2560.0     16.94    15.83    13.95     NO
  200.     6.765        4         3.5    3.8   1120.0     30.02    31.45    27.94     NO
  300.     4.978        4         2.0    2.2    640.0     47.47    46.72    41.76     NO
  400.     4.919        6         1.0    1.1  10000.0     53.83    42.75    28.25     NO
  500.     5.575        6         1.0    1.1  10000.0     53.83    51.76    32.75     NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
   53.    11.27         3        10.0   10.7   3200.0     15.03    11.81    10.86     NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 ***************************************
      *** REGULATORY (Default) ***
     PERFORMING CAVITY CALCULATIONS
   WITH ORIGINAL SCREEN CAVITY MODEL
           (BRODE, 1988)
 ***************************************

 *** CAVITY CALCULATION - 1 ***        *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    0.000        CONC (UG/M**3)      =    0.000
  CRIT WS @10M (M/S)  =    99.99        CRIT WS @10M (M/S)  =    99.99
  CRIT WS @ HS (M/S)  =    99.99        CRIT WS @ HS (M/S)  =    99.99
  DILUTION WS (M/S)   =    99.99        DILUTION WS (M/S)   =    99.99
  CAVITY HT (M)       =     5.00        CAVITY HT (M)       =     4.28
  CAVITY LENGTH (M)   =    14.49        CAVITY LENGTH (M)   =     8.96
  ALONGWIND DIM (M)   =     7.32        ALONGWIND DIM (M)   =    19.69

 CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S.  CONC SET = 0.0

 ***************************************
      END OF CAVITY CALCULATIONS
 ***************************************
```

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SI[illegible]E TERRAIN	11.27	53.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

APPENDIX G

PERMIT TO CONSTRUCT (PTC) FORMS

Department of Environmental Quality - Air Quality Division
Minor Source Permit to Construct Application Completeness Checklist

This checklist is designed to aid the applicant in submitting a complete permit to construct application.

I. Actions Recommended Before Submitting Application

☒ Refer to the Rule. Read the Permit to Construct requirements contained in IDAPA 58.01.01.200-228, Rules for the Control of Air Pollution in Idaho. The Rules are available on DEQ's website (go to http://adm.idaho.gov/adminrules/rules/idapa58/0101.pdf).

☒ Refer to DEQ's Permit to Construct Guidance Document. DEQ has developed a guidance document to aid applicants in submitting a complete permit to construction application. The guidance document is located on DEQ's website (go to http://www.deq.idaho.gov/air/permits_forms/permitting/ptc_prepermit_guidance.pdf).

☒ Consult with DEQ Representatives. It is recommended that the applicant consult with DEQ to discuss application requirements before submitting the permit to construct application. The consultation can be in person or on the phone. Contact DEQ's Air Quality Hotline at **877-5PERMIT** to schedule the consultation.

☒ Submit Ambient Air Quality Modeling Protocol. It is required that an ambient air quality modeling protocol be submitted to DEQ at least two (2) weeks before the permit to construct application is submitted. Contact DEQ's Air Quality Hotline at **877-5PERMIT** for information about the protocol.

II. Application Content

Application content should be prepared using the checklist below. The checklist is based on the requirements contained in IDAPA 58.01.01.202.

☒ Apply for a Permit to Construct. Submit a Permit to Construct application using forms available on DEQ's website at http://www.deq.idaho.gov/air/permits_forms/forms/ptc_general_application.pdf.

☒ Permit to Construct Application Fee. The permit to construct application fee must be submitted at the time the original pre-permit construction approval application is submitted. Refer to IDAPA 58.01.01.224.

☒ Process Description(s). The process or processes for which construction is requested must be described in sufficient detail and clarity such that a member of the general public not familiar with air quality can clearly understand the proposed project. A process flow diagram is required for each process for which pre-permit construction approval is requested.

☒ Equipment List. All equipment that will be used for which construction is requested must be described in detail. Such description includes, but is not limited to, manufacturer, model number or other descriptor, serial number, maximum process rate, proposed process rate, maximum heat input capacity, stack height, stack diameter, stack gas flowrate, stack gas temperature, etc. All equipment that will be used for which construction is requested must be clearly labeled on the process flow diagram.

☒ Potential to Emit. Submit the uncontrolled potential to emit (pre-control equipment emissions estimates) and the controlled potential to emit (post-control equipment emissions estimates) for all equipment for which construction is requested. Any limit on the equipment for which is construction is requested may become a limit on that equipment in the permit to construct.

☒ Potential to Emit and Modeled Ambient Concentration for All Regulated Air Pollutants. All proposed emission limits and modeled ambient concentrations for all regulated air pollutants must demonstrate compliance with all applicable air quality rules and regulations. Regulated air pollutants include criteria air pollutants, toxic air pollutants listed pursuant to IDAPA 58.01.01.585 and 586, and hazardous air pollutants listed pursuant to

Section 112 of the 1990 Clean Air Act Amendments (go to http://www.epa.gov/ttn/atw/188polls.html). Describe in detail how the proposed emissions limits and modeled ambient concentrations demonstrate compliance with each applicable air quality rule and regulation. It is requested that emissions calculations, assumptions, and documentation be submitted with sufficient detail so DEQ can verify the validity of the emissions estimates.

☒ Scaled Plot Plan. It is required a scaled plot plan be included in the permit to construct application and must clearly label the location of each proposed process and the equipment that will be used in the process.

☒ List all Applicable Requirements. All applicable requirements must be cited by the rule or regulation section/subpart that applies for each emissions unit.

☒ Certification of Permit to Construct Application. The permit to construct application must be signed by the Responsible Official and must contain a certification signed by the Responsible Official. The certification must state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Refer to IDAPA 58.01.01.123.

☒ Submit the Permit to Construct Application. Submit the permit to construct application and processing fee to the following address:

Air Quality Program Office – Application Processing
Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706-1255

Department of Environmental Quality
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline - 1-877-5PERMIT

AQ-CH-P004
Rev: 3
1/25/08

15- Day Pre-Permit Construction Approval Application Completeness Checklist

This checklist is designed to aid the applicant in submitting a complete pre-permit construction approval application.

I. Actions Needed Before Submitting Application

☒ Refer to the Rule. Read the Pre-Permit Construction requirements contained in IDAPA 58.01.01.213, Rules for the Control of Air Pollution in Idaho.

☒ Refer to DEQ's Pre-Permit Construction Approval Guidance Document. DEQ has developed a guidance document to aid applicants in submitting a complete pre-permit construction approval application. The guidance document is located on DEQ's website (go to http://www.deq.idaho.gov/air/permits_forms/permitting/ptc_prepermit_guidance.pdf

☒ Consult with DEQ Representatives. Schedule a meeting with DEQ to discuss application requirements before submitting the pre-permit construction approval application. The meeting can be in person or on the phone. Contact DEQ's Air Quality Permit Coordinator at (208) 373-0502 to schedule the meeting. Refer to IDAPA 58.01.01.213.01b.

☒ Schedule Informational Meeting. Schedule an informational meeting before submitting the pre-permit construction approval application for the purposes of satisfying IDAPA 58.01.01.213.02.a. The purpose for the informational meeting is to provide information about the proposed project to the general public. Refer to IDAPA 58.01.01.213.01.c.

☒ Submit Ambient Air Quality Modeling Protocol. It is required that an ambient air quality modeling protocol be submitted to DEQ at least two (2) weeks before the pre-permit construction approval application is submitted. Contact DEQ's Air Quality Modeling Coordinator at (208) 373-0502 for information about the protocol.

☒ Written DEQ Approved Protocol. Written DEQ approval of the modeling protocol must be received before the pre-permit construction approval application is submitted. Refer to IDAPA 58.01.01.213.01.c.

II. Application Content

Application content should be prepared using the checklist below. The checklist is based on the requirements contained in IDAPA 58.01.01.213 and DEQ's Pre-Permit Construction Approval Guidance Document.

☒ Pre-Permit Construction Eligibility and Proof of Eligibility. Pre-permit construction approval is available for minor sources and for minor modifications only. Emissions netting and emissions offsets are not allowed to be used. A certified proof of pre-permit construction eligibility must be submitted with the pre-permit construction approval application. Refer to IDAPA 58.01.01.213.01.

☒ Request to Construct Before Obtaining a Permit to Construct. A letter requesting the ability to construct before obtaining the required permit to construct must be submitted with the pre-permit construction approval application. Refer to IDAPA 58.01.01.213.01.c.

☒ Apply for a Permit to Construct. Submit a Permit to Construct application using forms available on DEQ's website at http://www.deq.idaho.gov/air/permits_forms/forms/ptc_general_application.pdf. Refer to IDAPA 58.01.01.213.01.a.

☒ Permit to Construct Application Fee. The permit to construct application fee must be submitted at the time the original pre-permit construction approval application is submitted. Refer to IDAPA 58.01.01.224.

☒ Notice of Informational Meeting. Within ten (10) days after the submittal of the pre-permit construction approval application, an information meeting must be held in at least one location in the region where the stationary source will be located. The information meeting must be made known by notice published at least ten (10) days before the information meeting in a newspaper of general circulation in the county in which the stationary source will be located. A copy of this notice, as published, must be submitted with the pre-permit construction approval application. Refer to IDAPA 58.01.01.213.02.a.

☒ Process Description(s). The process or processes for which pre-permit construction approval is requested must be described in sufficient detail and clarity such that a member of the general public not familiar with air quality can clearly understand the proposed project. A process flow diagram is required for each process for which pre-permit construction approval is requested. Refer to IDAPA 58.01.01.213.01.c.

☒ Equipment List. All equipment that will be used for which pre-permit construction approval is requested must be described in detail. Such description includes, but is not limited to, manufacturer, model number or other descriptor, serial number, maximum process rate, proposed process rate, maximum heat input capacity, stack height, stack diameter, stack gas flowrate, stack gas temperature, etc. All equipment that will be used for which pre-permit construction approval is requested must be clearly labeled on the process flow diagram. Refer to IDAPA 58.01.01.213.01.c.

☒ Scaled Plot Plan. It is recommended that a scaled plot plan be included in the pre-permit construction approval application and must clearly label the location of each proposed process and the equipment that will be used in the process.

☒ Proposed Emissions Limits and Modeled Ambient Concentration for All Regulated Air Pollutants. All proposed emission limits and modeled ambient concentrations for all regulated air pollutants must demonstrate compliance with all applicable air quality rules and regulations. Regulated air pollutants include criteria air pollutants (PM_{10}, SO_x, NO_2, O_3, CO, lead), toxic air pollutants listed pursuant to IDAPA 58.01.01.585 and 586, and hazardous air pollutants listed pursuant to Section 112 of the 1990 Clean Air Act Amendments (go to http://www.epa.gov/ttn/atw/188polls.html). Describe in detail how the proposed emissions limits and modeled ambient concentrations demonstrate compliance with each applicable air quality rule and regulation. It is requested that emissions calculations, assumptions, and documentation be submitted with sufficient detail so DEQ can verify the validity of the emissions estimates. Refer to IDAPA 58.01.01.213.01.c.

☒ Restrictions on a Source's Potential to Emit. Any proposed restriction on a source's potential to emit such that permitted emissions will be either below major source levels or below a significant increase must be described in detail in the pre-permit construction approval application. Refer to IDAPA 58.01.01.213.01.d.

☒ List all Applicable Air Quality Rules and Regulations. All applicable rules and regulations must be cited by the rule or regulation section/subpart that applies for each emissions unit. Refer to IDAPA 58.01.01.213.01.c.

☒ Certification of Pre-Permit Construction Approval Application. The pre-permit construction approval application must be signed by the Responsible Official and must contain a certification signed by the Responsible Official. The certification must state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Refer to IDAPA 58.01.01.213.01.d and IDAPA 58.01.01.123.

☒ Submit the Pre-Construction Approval Application. Submit the pre-permit construction approval application to the following address:

Department of Environmental Quality
Air Quality Division
Stationary Source Program
1410 North Hilton
Boise, ID 83706-1255

Department of Environmental Quality - Air Quality Division
Toxic Air Pollutant (TAP) Preconstruction Compliance Application Completeness Checklist

This checklist is designed to aid the applicant in submitting a complete preconstruction compliance demonstration for toxic air pollutants (TAPs) in permit to construct applications.

I. Actions Needed Before Submitting Application

☒ Refer to the Rule. Read the Demonstration of Preconstruction Compliance with Toxic Standards contained in IDAPA 58.01.01.210 (Section 210) Rules for the Control of Air Pollution in Idaho. Toxic air pollutants are regulated in accordance with Section 210 only from emission units constructed or modified on or after July 1, 1995.

Determine if a new (constructed after June 30, 1995) emission unit has the potential to emit a toxic air pollutant (TAP) listed in IDAPA 58.01.01.585 (Section 585) or IDAPA 58.0101.586 (Section 586). Potential toxic air pollutants can be determined by reviewing commonly available emission factors, such as EPA's AP-42, or calculating emissions using a mass balance. For toxic air pollutants that are emitted but not listed in Section 585 and 586, contact the Air Permit Hotline at 877-5PERMIT.

Determine if the proposed construction or modification is exempt from the need to obtain a permit to construct in accordance with IDAPA 58.01.01.220-223. Use the Exemption Criteria and Reporting Requirements for Toxic Air Pollutants IDAPA 58.01.01.223 checklist to assist you in the exemption determination. For all sources that do not qualify for an exemption in accordance with IDAPA 58.01.01.220-223 complete the following checklist and submit it with the permit application. Please note that fugitive TAP emissions are not included in the IDAPA 58.01.01.223 exemption determination, but fugitive TAP emissions are included in the analysis if a permit is required.

Will the new or modified source result in new or increased emissions of toxic air pollutants?

☒ Yes. If yes, continue to section II.

☐ No. If no, no further action is required.

II. Application Content

If a new source has the potential to emit a TAP, or if a modification to an existing source increases the potential to emit of a TAP, then one of the following methods (A-J) of demonstrating TAP preconstruction compliance must be documented for each TAP. Standard methods are one of A-C. The applicant may also use one of the specialized methods in D-J. Fugitive TAP emissions shall be included in the analysis. The compliance methods are based on the requirements of Section 210. Applicants are often able to demonstrate preconstruction TAP compliance using a combination of methods A and B.

Emission Calculations

Emissions calculation methodologies used are dependent on whether a specific TAP is a non-carcinogen or a carcinogen and whether the compliance method chosen from the list below calls for controlled or uncontrolled emissions. Non-carcinogens are regulated as a 24-hour averaged increment and values used for comparison to the non-carcinogen screening emissions level (EL) should be the maximum controlled or uncontrolled emissions quantity during any 24-hour period divided by 24. Carcinogens are regulated as a long term increment and values used for

comparison to the carcinogen EL should be the maximum controlled or uncontrolled emissions quantity during any 1 year period divided by 8760.

Modeling Analyses

Atmospheric dispersion modeling is required when applicable TAP emissions quantities exceed ELs. Modeling analyses should be conducted in accordance with IDAPA 58.01.01.210.03. Quantification of Ambient Concentrations and the State of Idaho Air Quality Modeling Guideline (http;//www.deq.idaho.gov/air/data_reports/publications.cfm#model). For non-carcinogen 24-hour increments, compliance is demonstrated using the maximum modeled 24-hour-averaged concentration from available meteorological data (typically a five-year data set). For carcinogen long-term increments, compliance is demonstrated using the maximum modeled average concentration for the duration of the data set (one-year to five-year data set).

A submitted modeling report should clearly specify modeled emissions rates and results. All electronic model input files should be submitted, including BPIP input files.

Compliance Methods

Fill in letter(s) (A-J) from the list below for TAP compliance demonstration method(s) used: _____.

A. TAPs Compliance Using Uncontrolled Emissions (Section 210.05)

☒ Calculate the uncontrolled emissions (Section 210.05) of each TAP from new emissions units. Uncontrolled emission rates are emissions at maximum capacity without the effect of physical or operational limitations. See Quantification of Emission Rates (Section 210.02). Show calculations and state all assumptions.

☒ Calculate the increase of TAP emissions from modified emissions units. Show calculations and state all assumptions. The increase in emissions for a modified emission unit is determined by subtracting the potential to emit the TAP before the modification from the uncontrolled potential to emit after the modification. In conducting this analysis please note the following for TAP emission rate increase determinations:

Uncontrolled emission rates after the modification are emissions at maximum capacity without the effect of physical or operational limitations.

When determining the emissions increase from existing permitted emissions units the emission rate before the modification is equivalent to the emission limits contained in the permit for the TAPs or, if there no emission limits in the permit, by determining what the emission rate is under the physical or operational limitations contained in the permit.

☒ Aggregate the uncontrolled emissions for each TAP from all new emissions units with the increase in emissions from all modified emissions units.

☒ If the aggregated emissions increase for each TAP from the new and modified units, as determined above, are less than or equal to the respective TAP screening emissions level (EL) then preconstruction compliance with toxic standards has been demonstrated and no further analysis is required. Submit a table comparing the uncontrolled emissions rate to the applicable EL.

If aggregated emissions are greater than the respective screening emissions level (EL) for any pollutants, use another compliance demonstration method for those pollutants, such as methods B, C, or D.

B. TAP Compliance Using Uncontrolled Ambient Concentration (Section 210.06)

☒ Determine the uncontrolled emissions of each TAP from new emission units and the increase in emissions from all modified emissions units as described above in compliance Method A. Show calculations and state all assumptions.

☒ Model the uncontrolled emissions of each TAP from new emissions units and the increase in emissions from all modified emissions units.

☒ If the uncontrolled ambient concentration is less than or equal to the acceptable ambient concentration increment listed in Section 585 and 586 no further procedures for demonstrating preconstruction compliance will be required for that toxic air pollutant as part of the application process. Submit a table comparing uncontrolled ambient concentrations to the applicable acceptable ambient concentration.

C. TAP Compliance Using Controlled Ambient Concentrations (Section 210.08)

☐ Determine the controlled emissions from new emissions units and the controlled emission increase from modified emissions units. Show all calculations and state all assumptions, including the control methods.

☐ Model the controlled emissions of each TAP from new emissions units and the increase in controlled emissions from all modified emissions units.

☐ If the controlled ambient concentration from emission increases from new emissions units and modified emissions units is less than the applicable acceptable ambient concentration no further procedures for demonstrating preconstruction compliance are required.

☐ The Department shall include an emission limit for the toxic air pollutant in the permit to construct that is equal to or, if requested by the applicant, less than the emission rate that was used in the modeling (Section 210.08.c).

In some instances the Department may consider a throughput limit or other inherently-limiting operational restriction in a permit as an effective emission limit for the TAP, rather than a TAP-specific emissions limit. Note that the applicant may model uncontrolled emissions as described in compliance Method B in an attempt to avoid TAPs emissions limitations.

D. TAPs Compliance for NSPS and NESHAP Sources (Section 210.20)

☐ If the owner or operator demonstrates that the toxic air pollutant from the source or modification is regulated by the Department or EPA at the time of the permit issuance under 40 CFR Part 60, 40 CFR Part 61 or 40 CFR Part 63, no further procedures for demonstrating preconstruction compliance will be required for that toxic air pollutant.

☐ Provide a demonstration that the toxic air pollutant is regulated under 40 CFR Part 60, 40 CFR Part 61 or 40 CFR Part 63. This demonstration must be specific for each TAP emitted.

E. TAP Compliance Using Net Emissions (Section 210.09)

An applicant may use TAP net emissions to show preconstruction compliance; however this analysis may require more work than some of the others procedures available to demonstrate preconstruction compliance. When netting, emissions increases and decreases of the TAP that have occurred within five years must be included in the analysis as described below.

☐ Determine the net emission increase for a TAP. A net emissions increase shall be an emission increase from a particular modification plus any other increase and decreases in actual emissions at the facility that are creditable and contemporaneous with particular modification (Section 210.09). Show all calculations and state all assumptions.

☐ A creditable increase or decrease in actual emissions is contemporaneous with a particular modification if it occurs within five (5) years of the commencement of the construction or modification (Section 210.09.a).

Actual emissions are (Section 006.03):

- ☐ In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two year period which precedes the particular date and which is representative of normal source operation. The Department shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, productions rates, and types of materials processed, stored, or combusted during the selected time period.

- ☐ The Department may presume that the source-specific allowable emissions for the unit are equivalent to actual emissions of the unit.

- ☐ For any emission unit (except electric utility steam generating units) that has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

☐ Do not include emissions increases from emission units that have an uncontrolled emission rate that is 10% or less than the applicable screening emission level (EL) in Section 585 and 586 (Section 007.09.c.ii) and do not include emission increases from environmental remediation sources (Section 007.09.c.iii). Show all calculations and state all assumptions.

☐ If the net emission increase is less than or equal to the applicable screening emissions level (EL) listed in Section 585 and 586, no further procedures for demonstrating preconstruction compliance will be required (Section 210.09.c).

☐ The Department shall include emission limits and other permit terms for the toxic air pollutant in the permit to construct that will assure that the facility will be operated in the manner described in the preconstruction compliance demonstration (Section 210.09.d).

In some instances the Department may consider a throughput limit or other inherently-limiting operational restriction in a permit as an effective emission limit for the TAP, rather than a TAP-specific emissions limit.

F. TAP Compliance Using Net Ambient Concentration (Section 210.10)

☐ Determine the emission increase from the new source or modification, and all other creditable emission increases and decrease using the methods described above in compliance Method E.

☐ Model the emissions increases and decreases for each TAP. Modeling TAP decreases is accomplished by using negative valued emissions rates in the model input.

☐ If the net ambient concentration is less than or equal to the applicable ambient concentration increment listed in Section 585 and 586, no further procedures for demonstrating preconstruction compliance are required.

☐ The Department shall include emission limits and other permit terms for the toxic air pollutant in the permit to construct that will assure that the facility will be operated in the manner described in the preconstruction compliance demonstration (Section 210.10.d).

In some instances the Department may consider a throughput limit or other inherently-limiting operational restriction in a permit as an effective emission limit for the TAP, rather than a TAP-specific emissions limit.

G. TAP Compliance Using T-RACT Ambient Concentration for Carcinogens (Section 210.12)

The applicant may use T-RACT to demonstrate preconstruction compliance for toxic air pollutants listed in Section 586 only.

T-RACT is an emissions standard based on the lowest emission of toxic air pollutants that a particular source is capable of meeting by application of control technology that is reasonably available, as determined by the Department, considering technological and economic feasibility. If control technology is not feasible, the emission standard may be based on the application of a design, equipment, work practice or operational requirement, or combination thereof (Section 007.16).

T-RACT Submittal Requirements

☐ The applicant shall submit the following information to the Department identifying and documenting which control technologies or other requirements the applicant believes to be T-RACT (Section 210.14).

The technical feasibility of a control technology or other requirements for a particular source shall be determined considering several factors including but not limited to:

- ☐ Process and operating procedures, raw materials and physical plant layout.
- ☐ The environmental impacts caused by the control technology that can not be mitigated, including but not limited to, water pollution and the production of solid wastes.
- ☐ The energy requirements of the control technology.

The economic feasibility of a control technology or other requirement, including the costs of necessary mitigation measures, for a particular source shall be determined considering several factors including, but not limited to:

- ☐ Capital costs.
- ☐ Cost effectiveness, which is the annualized cost of the control technology divided by the amount of emission reduction.
- ☐ The difference in costs between the particular source and other similar sources, if any, that have implemented emissions reductions.

☐ Compare the source's or modification's approved T-RACT ambient concentration to the applicable acceptable ambient concentration increment listed in Section 586 multiplied by a factor of 10. If the sources approved T-RACT concentration is less than or equal to 10 times the applicable acceptable ambient concentration increment listed in Section 586, no further procedures for demonstrating preconstruction compliance will be required.

☐ If an application is submitted to the Department without T-RACT and determined complete, and T-RACT is later determined to be applicable the completeness determination of the application will be revoked until a supplemental application is submitted and determined complete. When the supplemental application is determined complete, the timeline for agency action shall be reinitiated (Section 210.13.b).

☐ If the Department determines that the source has proposed T-RACT, the Department shall develop emission standards to be incorporated into a permit to construct.

In some instances, the Department may consider a throughput limit or other inherently limiting operational restriction in a permit as an effective emission limit for the TAP, rather than a TAP-specific emissions limit.

H. TAP Compliance Using the Short Term Source Factor (Section 210.15)

☐ For short term sources, the applicant may utilize a short term adjustment factor of ten (10) only for a carcinogenic pollutant listed in Section 586. For a carcinogen listed in Section 586 multiply either the applicable acceptable ambient concentration increment or the screening emission rate (EL), but not both, by ten (10) to demonstrate preconstruction compliance (Section 210.15).

☐ A short term source is any new stationary source or modification to an existing source, with an operational life no greater than five (5) years from the inception of any operations to cessation of actual operations (Section 210.15).

I. TAP Compliance for Environmental Remediation Sources (Section 210.16)

☐ For remediation sources subject to or regulated by the Resource Conservation and Recovery Act and the Idaho Rules and Standard for Hazardous Waste, or the comprehensive Environmental Response, Compensation and Liability Act or a consent order, if the estimated ambient concentration is greater than the acceptable ambient impact increment listed in Section 585 and 586, Best Available Control Technology shall be applied and operated until the estimated uncontrolled emission from the remediation source are below the applicable acceptable ambient concentration increment (Section 210.16).

J. TAP Compliance Using Offset Ambient Concentration (Section 210.11)

☐ Contact the Department prior to proposing to utilize Offset Ambient Concentrations to demonstrate preconstruction compliance.

☐ Emission offsets must satisfy the requirements for emission reduction credits (Section 460).

- The proposed level of allowable emissions must be less than the actual emissions of the emissions units providing the offsets (Section 460.01).
- An air quality permit must be issued that restricts the potential to emit of the emission unit providing the offset.
- Emission reduction imposed by local, state or federal regulations or permits shall not be allowed.

☐ Compare the source's or modifications approved emission offset ambient concentration to the applicable acceptable ambient concentration listed in Section 585 and 586. If the source's or modifications approved offset concentration is less than the acceptable ambient concentration listed in Section 585 and 586, no further procedures for demonstrating preconstruction compliance will be required.

☐ The Department shall include emission limits and other permit terms for the toxic air pollutant in the permit to construct that will assure that the facility will be operated in the manner described in the preconstruction compliance demonstration (Section 210.10.d).